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THE MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH

HISTORICAL SKETCH

The Mayo Foundation for Medical Education and Research is an endowed department of the Graduate School of the University of Minnesota. Its purposes are indicated in its title. It was founded and endowed by Dr. William J. Mayo and Dr. Charles H. Mayo. It was incorporated February 9, 1915, and became a part of the University of Minnesota, June 9, 1915. The original endowment fund was \$1,500,000 which is being added to annually by the interest accruing thereon, the funds for the support of the work at present being provided by Dr. William J. Mayo and Dr. Charles H. Mayo.

The work of the Foundation is an organized outgrowth of the internships, residencies, and assistantships of the Mayo Clinic. The Mayo Clinic had its origin in the work of Dr. William Worrell Mayo and his two sons, William J. and Charles H. From about 1884 to about 1895 this group of physicians was engaged in a general practice which rapidly became more and more limited to surgery. About 1895 their work had become largely diagnostic and surgical, their patients being cared for in St. Mary's Hospital, which is owned and controlled by the Sisters of St. Francis. Interns and residents in St. Mary's Hospital were under the direction of these physicians in the ordinary manner. Some of them were afterward taken on as assistants in the physicians' offices which were used for diagnosis.

In 1905 a definite policy for the development of laboratories was begun. In these laboratories medical graduates were taken on as assistants for one or two years and were then made hospital interns or assistants in medicine or surgery. This plan gradually shaped itself until in 1912 definite three-year courses in pathology, clinical medicine, and surgery were instituted for graduates in medicine.

The development of the graduate work in medicine in the Mayo Clinic had reached such a state by 1914 that at the suggestion of President George C. Vincent of the State University steps were taken by the University authorities to make the work a part of the medical education of the University of Minnesota. In order to

safeguard the interests of the state and to stabilize the work at Rochester the Mayo Foundation was then founded and endowed.

The graduate work in medicine in the Medical School of the University and in the Mayo Foundation is a part of the work in the general Graduate School in the University. Its management is entrusted by the Board of Regents to a Committee consisting of the President of the University, the Dean of the Graduate School, the Dean of the Medical School, and the Director of the Mayo Foundation, ex-officio, together with three other members of the faculty of the Medical School and three other members of the faculty of the Mayo Foundation appointed by the Board of Regents.

The graduate medical educational work in the Mayo Foundation is planned to provide opportunities for graduates of Class A medical schools who have had at least one year of internship or laboratory training, after graduation, to fit themselves for the practice of medicine in some special field, or to become investigators or teachers of medicine. Work is laid out along the lines ordinarily followed by candidates for advanced degrees (M.S. and Ph.D.) in other departments of the University.

In clinical branches students are scheduled for work which brings them in contact with patients approximately but half their time; the remainder of the period is devoted to careful laboratory and literary study in their special fields. The educational resources are adequate laboratory, museum, clinical and library facilities, and a well qualified faculty whose members act as advisors and critics but not as pedagogues in the formal sense. There are no classes. No short term "cramming" courses are offered. Lectures on which attendance is voluntary are given only by men who are authorities in their particular fields.

Every effort is made to impress the graduate student with the fact that his residence is an opportunity for him to find out things for himself and not a period in which he will be didactically instructed by undergraduate methods.

A confidential report on each graduate student is made to the Director by his advisor each quarter. On the basis of these confidential reports and a final conference the graduate student may be recommended as a worthy candidate to take the final examinations and present and defend a thesis, on the success of which he may be recommended to the Board of Regents as worthy of an advanced

degree. The degree of M.S. in a clinical subject indicates high professional proficiency in that field. The degree of Ph.D. indicates high professional proficiency plus the demonstrated ability to do research work of real scientific merit.

All graduate students are Fellows in the Mayo Foundation and as such, if they are majoring in clinical branches, receive stipends of \$600, \$750, and \$1,000 a year for the first, second, and third years respectively. Fellows majoring in fundamental branches receive \$900, \$1,200, and \$1,500 for the first, second, and third years respectively.

Students who do not evince strong personal initiative are not recommended for annual reappointment or may be asked to resign their Fellowships before the end of their current year. In the arrangement of work the best opportunities are consistently given to the best qualified men; mediocre men are not permitted to continue filling opportunities to the exclusion of high grade men.

Twenty-seven advanced degrees have been granted since 1915. Twenty-three of these are masters' degrees and four are doctors' degrees. At present there are 142 graduate medical students in the Mayo Foundation. This is nearly the capacity of the Foundation. During the last year and one-half about 1,500 applications for Fellowships have been received. From these sixty Fellows have been appointed.

The research work of the Mayo Foundation is conducted personally by or under the direct supervision of members of the faculty whose whole time is spent in the Foundation, or part of whose time is in the Foundation and part in the Mayo Clinic. The subjects of research cover a wide field. Those on the pathology, biochemistry and physiology of the thyroid, on the bacteriology of various infectious diseases, on the physiology of shock, on physiology of the suprarenals, and the liver, on the pathology and biochemistry of malignant tumors, on fluoroscopy, on cardiography, on basal metabolism, and on surgical technic, may be mentioned.

LOUIS B. WILSON, *Director*

THE MAYO FOUNDATION ALUMNI CHAPTER

For several years there have been a number of members of Sigma Xi in the Mayo Foundation and Mayo Clinic. From time to time one of these members would mention the fact that there

were enough men to have an organization of some sort, but it was not until December, 1919, that a group was finally formed into a temporary organization with the idea of carrying out, to some degree, the principles of Sigma Xi.

A preliminary meeting was held December 3, 1919. A committee was appointed and at frequent intervals thereafter during the month, meetings were held and finally resolutions were drawn up making a working basis for the temporary organization. We determined to have informal meetings for the discussion of things purely scientific, avoiding as much as possible anything pertaining to Medicine, and also to endeavor, as soon as could be arranged, that our organization become recognized by the National Organization in accordance with the constitution of Sigma Xi. The matter was presented before the National Convention on December 26, 1919, in the form of a petition with fourteen names representing eleven different institutions.

A meeting was held January 6, 1920, at which time Doctor T. B. Magath reported enthusiastically on what he had heard at the National Convention and gave us great hope that our petition would be granted.

Another meeting was held January 20th at which time Doctor E. C. Kendall gave us some interesting facts of modern chemistry, particularly emphasizing the opportunity of American chemists that had developed during the war.

February 17, 1920, another meeting was held at which time Dr. Magath talked on his experiences at the Biological Laboratory of the United States Bureau of Fisheries at Fairport, Iowa.

At a meeting held March 16th, the general topic of conversation was on colloids, the discussion being preceded by an interesting talk on the subject by Doctor Kendall.

All of these meetings were very informal, the men meeting at the Clinic lunchroom where a cafeteria supper was served. It was arranged, however, that the group should eat together in a secluded nook, where matters of common interest might be discussed freely. After these informal suppers, an hour was spent in scientific discussions in one of the laboratory rooms of the Mayo Clinic building.

We had heard in the meantime favorably from the University of Minnesota as to their desire to initiate the eight men whose names had been proposed for membership, and also that at their

regular election our Mr. Osterberg had been elected to membership in the University of Minnesota Chapter.

May 21, 1920, the University of Minnesota Chapter sent to Rochester as representatives Dean R. W. Thatcher, President, Doctor R. N. Chapman, Dean L. W. Jones and Doctor C. J. V. Pettibone to initiate these newly elected members of Sigma Xi. The meeting was held in the Assembly room of the Mayo Clinic building at 4:30 p. m. The temporary organization was called to order by Doctor Sanford. Dean Thatcher was introduced and he immediately called to order a special meeting of the Minnesota Chapter of Sigma Xi. The usual initiation ceremonies then followed, the men initiated being:

William James Mayo, M.D.	Edward Carl Rosenow, M.D.
Charles Horace Mayo, M.D.	Henry William Woltmann, M.D.
Henry Stanley Plummer, M.D.	Donald Church Balfour, M.D.
Edward Starr Judd, M.D.	A. E. Osterberg.
William Carpenter MacCarty, M.D.	

After the initiation ceremonies the meeting was called to order for the purpose of installation of the Mayo Foundation Alumni Chapter of Sigma Xi by Doctor Julius Stieglitz, retiring President of the National Society of Sigma Xi. All the men present were installed as charter members of the new Alumni Chapter. In addition to the names of the new initiates mentioned above, there were also installed:

- Dr. Alfred Washington Adson (Nebraska)
- Dr. Harry Herman Bowing (Pennsylvania)
- Dr. Nat Hawkins Copenhaver (Yale)
- Dr. William DePrez Inlow (Chicago)
- Dr. Edwin Calvin Kendall (Columbia)
- Dr. James Robert McVay (Missouri)
- Dr. Thomas Byrd Magath (Illinois)
- Dr. James Albert Hughes Magoun, Jr. (Pennsylvania)
- Dr. Frank Charles Mann (Indiana)
- Dr. Arthur Hawley Sanford (Northwestern)
- Dr. John Hinchman Stokes (Michigan)
- Dr. Joseph Peter Weyrens (Minnesota)
- Dr. Russel Morse Wilder (Chicago)
- Dr. Louis Blanchard Wilson (Minnesota)

Doctor Henry B. Ward, University of Illinois, National Secretary of Sigma Xi, assisted in the installation ceremonies.

Doctor Stieglitz gave an inspiring address on what research means for a country and expressed the hope that scientific men would continue the work so admirably begun during the war by the construction and creation of greater things for the betterment of mankind, particularly along medical lines.

He pointed out that while at first man was in an adoptive state, he later entered a state of adaptiveness, and now he has definitely begun a period of creative science. Nature is not all-wise after all, and the scientific mind can find loop-holes for improvement; instead of accepting conditions as they are, science is beginning to step ahead of nature in an attempt to create. He made special reference to the work of Doctor Mayo in surgery and Professor Kendall in the production of thyroxin and stated that he believed the future belongs to the creative scientist. At the close of his address a beautifully engrossed Charter for the new chapter was presented with his very best wishes for its future.

At 6:30 o'clock at the Zumbro Hotel a banquet was served for the members and guests. During the meal, impromptu speeches were made by Dean R. W. Thatcher, Doctors Julius Stieglitz, W. J. Mayo, L. B. Wilson, and Dean L. W. Jones of the University of Minnesota.

At 8:00 o'clock a most interesting lecture was given by Dr. Henry W. Ward, entitled *On the Trail of the Pacific Salmon*. By way of introduction he pointed out that the ruthless fishing of the salmon had made the genus almost unknown in the East. Professor Ward stated that the present method of fishing salmon would surely drain all the Northwest and Alaskan streams of the fish which in 1919 brought the salmon canneries \$50,000,000 and which to the scientist are of interest because of their habits and homing instinct. Lantern slide illustrations portraying the difficulties and beauties of his recent trips along the Alaskan coast line were shown. This experiment was undertaken in order to learn the truth of the fisherman's tale that the full grown salmon from the ocean returns north for spawning to the same stream and exact spot where it was hatched a few years before. Doctor Ward's studies have led him to believe that the salmon's homing instinct is guided by a sense of temperature which always leads it to select

the cooler of two branching streams, and brings it to waters of a temperature suitable for the spawning nests.

The newly installed Mayo Foundation Alumni Chapter of Sigma Xi is to have its first regular meeting in the fall for election of officers and to make plans for the coming year. We are glad to notice that, since our installation meeting, there have been added to our staff more men wearing the Sigma Xi key. We anticipate a prosperous year. The old committee is now working on a plan for a "scientific picnic" which, if it materializes, will be held before our regular fall meeting.

A. H. SANFORD, *President*